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South Florida Ecosystem Restoration Task Force

Natural Lands Report

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February 16, 2006

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Executive Summary

Purpose

This report has been prepared pursuant to the direction of the House Appropriations Subcommittee on Interior and the Environment (the Committee) as set forth in the House of Representatives Report 109-80 dated May 13, 2005, to accompany the Department of the Interior, Environment, and Related Agencies Appropriation Bill, 2006. The Committee requested the Secretary of the Interior, as Chair of the South Florida Ecosystem Restoration Task Force (Task Force), to identify and prioritize lands for acquisition necessary to achieve natural system restoration goals; identify funding strategies that include innovative partnerships; and identify timeframes for when these prioritized lands would be acquired and available for restoration purposes.

Findings

The efforts to restore the Everglades ecosystem include acquisition of lands for a variety of needs, including water storage, water quality treatment and habitat restoration. The Task Force publishes a Land Acquisition Strategy each year to coordinate the overall land program. The focus of this report is on those projects with high natural system restoration benefits *and* extensive land acquisition efforts remaining. Therefore, projects nearing completion, such as the Kissimmee River Restoration and Modified Water Deliveries, were not included for in-depth analysis.

Identification and Prioritization of Natural Lands

This report identifies and prioritizes the natural attributes of lands associated with the following projects:

- Biscayne Bay Coastal Wetlands
- C-111 Spreader Canal
- Indian River Lagoon – South
- Lake Okeechobee Watershed

The analysis considered all unacquired lands within the project footprints for the Comprehensive Everglades Restoration Plan (CERP). Additional unacquired lands identified by the U.S. Fish and Wildlife Service (FWS) for their natural attributes and restoration potential outside of the CERP footprint were also assessed for the Lake Okeechobee Watershed. Wetlands and uplands that support native vegetation communities and associated fish and wildlife populations, either currently or post-restoration, were identified through a rigorous process detailed in Appendix A. The natural attributes of these lands were then assessed using six criteria. Project specific information and the resulting maps are located in Appendix B.

This process analyzed 189,471 acres of unacquired natural lands and prioritized 186,087 of those acres based upon their outstanding natural attributes and the key role they could play in ecosystem restoration.

Funding Strategies

The high level of activity in the land development market in Florida underscores the need to identify a full spectrum of funding strategies for the protection, conservation or restoration of natural lands. Over 50 funding sources that could potentially be utilized in support of South Florida Ecosystem restoration are identified in Appendix C. These include federal, state and county government programs as well as those of non-governmental organizations. Mechanisms, such as less-than-fee acquisitions and innovative partnerships, can help maximize the use of limited fiscal resources as South Florida's land costs continue to rise.

Acquisition Timeframes

The current schedule for natural land acquisition within the CERP footprints for the assessed projects is:

- Biscayne Bay Coastal Wetlands: Start May 2006; finish May 2007
- C-111 Spreader Canal: Start April 2008; finish October 2011
- Lake Okeechobee Watershed: Start June 2005; finish May 2008¹
- Indian River Lagoon – South: Start March 2002; finish October 2019

This report recognizes that timely land acquisition and conservation is a key element to successful ecosystem restoration. To that end, this document identifies lands with high value natural attributes and potential funding sources for their protection.

¹ The above schedule reflects acquisition anticipated for CERP. However, for the Lake Okeechobee Watershed, this report assessed additional acreage beyond the 3,500 acres currently identified for CERP. The additional acres are not yet part of a program with specific acquisition timeframes.

Background

South Florida's Natural Lands

Today's South Florida Ecosystem is based upon the remnants of hydrologically linked natural areas that once extended seamlessly across the peninsula. A unique combination of connectivity and spatial extent created the range of habitats and supported the levels of productivity needed for the historic diversity and abundance of South Florida's native plants and animals. Conserving these habitats and species will require extensive restoration of the ecosystem's altered hydrology and protection of the region's disappearing natural lands.

Efforts by state, federal, and local governments, tribes and non-governmental organizations have combined to provide South Florida with an impressive array of conservation lands. Continued acquisition of land (both fee simple and less-than-fee) will be necessary to achieve ecosystem restoration and to maintain viable and healthy populations of South Florida's plant and animal species. The Task Force tracks current land acquisition efforts and details progress made in the *South Florida Ecosystem Restoration Land Acquisition Strategy*.

Increasing Land Values

The increasing cost of land poses a direct challenge to the future conservation of additional natural lands in the South Florida Ecosystem. A January 2006 report by the University of Florida's Institute of Food and Agricultural Sciences tallies the results of a survey on agricultural land values. Survey participants relayed that agricultural lands within the report's South, Southeast, and Central regions (which collectively contain the South Florida Ecosystem and surrounding areas) increased in value between 50.6% and 152.9% between May 2004 and May 2005. The vast majority of survey respondents also anticipate a continuation of these increases in agricultural land values over the next year.²

Report Purpose

In May 2005, the U.S. House of Representatives Appropriations Subcommittee on the Interior and Environment requested the Secretary of the Interior, as Chair of the Task Force, to identify and prioritize lands for acquisition necessary to achieve natural system restoration goals. In addition, the Committee asked the Task Force to identify funding strategies, including innovative partnerships, and the timeframes for when these prioritized lands would be acquired and available for restoration purposes.

² John E. Reynolds, *Strong Nonagricultural Demand Keeps Agricultural Land Values Increasing* (Gainesville: University of Florida Institute of Food and Agricultural Sciences, January 2006), January 6, 2006 <<http://edis.ifas.ufl.edu/FE625>>.

Although the entire South Florida Ecosystem was initially considered for in-depth analysis, ultimately four Comprehensive Everglades Restoration Plan (CERP) projects were selected using the following criteria: projects that increase the spatial extent of wetlands and other natural areas; areas that currently support native vegetative communities and associated fish and wildlife populations or that will support similar natural attributes once restored; and time-sensitive restoration projects with significant land acquisition needs. For this reason projects nearing completion, such as the Kissimmee River Restoration and Modified Water Deliveries, were not included for further analysis. The resulting focus of this report is on lands with high value natural attributes associated with restoration projects that have extensive land acquisition efforts remaining.

The Comprehensive Everglades Restoration Plan

The 1996 Water Resources Development Act (WRDA) directed the U.S. Army Corps of Engineers (Corps) to study the existing water management system and develop a strategy for restoring the hydrology of South Florida. This effort resulted in CERP, a restoration plan for the South Florida Ecosystem approved within the 2000 WRDA.

Three of the projects assessed within this report have components identified for expedited implementation under the *Acceler8* initiative. Through this initiative, the State of Florida has committed to accelerate the construction of all or portions of certain CERP and other state projects, including portions of the Biscayne Bay Coastal Wetlands, C-111 Spreader Canal and Indian River Lagoon South projects.

Process and Findings

In order to fulfill the Committee's request, Task Force members and restoration stakeholders dedicated staff and resources to assemble a comprehensive natural lands database, identify priority natural lands, review potential funding sources and assess project timeframes.

Identification and Prioritization of Lands

The database compiled for this report includes land cover, rare species and conservation lands within the South Florida Ecosystem. The data within the 1999 Central and Southern Florida Project Comprehensive Review Study (Restudy) were used as a baseline with more recent information incorporated into the database.

The initial review focused on unacquired lands with high natural attributes and restoration projects with significant land acquisition remaining. Four projects were ultimately selected for further analysis:

- Biscayne Bay Coastal Wetlands
- C-111 Spreader Canal
- Indian River Lagoon – South
- Lake Okeechobee Watershed

The analysis considered all lands within the CERP project footprints that are not in public ownership. Additional lands identified by the FWS for their natural attributes and restoration potential outside of the CERP footprint were also assessed for the Lake Okeechobee Watershed. All of these unacquired lands were then analyzed for their natural attributes based on the following criteria:

- Land cover
- Rare species
- Florida Natural Areas Inventory (FNAI) Potential Natural Areas
- Connectivity with acquired conservation lands
- Connectivity with unacquired lands on an acquisition list
- Tract size

The analysis resulted in the overall prioritization of 186,087 acres. The scoring process for this analysis and further details on the above criteria are provided in Appendix A. Project summaries and maps of identified natural lands are contained in Appendix B.

Table 1. Natural Lands Associated with Analyzed CERP Projects								
<i>*Note that acres assessed are not to be considered acres remaining to be acquired for respective CERP projects, as this is determined by the Project Implementation Reports.</i>								
Assessed Acres	Project Name	Priority 1	Priority 2	Priority 3	Priority 4	Priority 5	Not Ranked	Acres Ranked
18,549	Biscayne Bay Coastal Wetlands	553	10,117	1,813	4,365	1,555	146	18,403
5,999	C-111 Spreader Canal	161	4,077	395	336	207	823	5,176
76,493	Indian River Lagoon – South	4,771	17,845	6,370	27,802	18,635	1,070	75,423
88,430	Lake Okeechobee Watershed	5,902	12,873	7,842	45,371	15,097	1,345	87,085
189,471	TOTAL	11,387	44,912	16,420	77,874	35,494	3,384	186,087

Source: Geographic Information System boundaries from the South Florida Water Management District and the U.S. Fish and Wildlife Service. Analysis conducted by Florida Natural Areas Inventory.

Funding Strategies

In many ways ecosystem restoration began with a partnership and must continue to forge further partnerships for success. In 1947, the federal government acquired land to establish Everglades National Park with the substantial contribution of 908,931 acres from the State of Florida. This noteworthy event has been followed and enhanced by numerous programs aimed at protecting and conserving South Florida's natural lands.

State and federal agencies alone currently manage 4.9 million acres of land important for the protection of natural habitat and species in South Florida. Substantial land acquisition for the overall CERP has already been accomplished with 193,574 acres acquired to date at an estimated \$1.1 billion, of which \$259 million was provided by the federal government through the U.S. Department of the Interior (DOI) and the U.S. Department of Agriculture (USDA).

These state and federal efforts are complemented by numerous ongoing acquisition and conservation programs including those implemented by local government and non-governmental organizations. Fourteen of the sixteen counties within in the South Florida Ecosystem have locally funded acquisition programs. These local programs have provided significant conservation efforts that link to and enhance ecosystem-wide restoration efforts.

Continued funding and the role of innovative partnerships and less-than-fee simple acquisition are of great interest, particularly as South Florida's land costs continue to rise. Over 50 funding sources that could potentially be utilized in support of South Florida Ecosystem restoration are identified in Appendix C. These include federal, state and county government programs as well as those of non-governmental organizations. Fifteen have been used to date in support of CERP conservation goals or land acquisition. Many of the programs provide opportunities to match or leverage funding available through other sources for land acquisition, conservation or restoration. Mechanisms, such as less-than-fee acquisitions and innovative partnerships, can also help maximize the use of limited fiscal resources.

Successful Partnerships and Conservation through the 2002 Farm Bill

Much of the protection and restoration of lands within the Indian River Lagoon – South project and the Lake Okeechobee Watershed has been achieved through federal, state and local government partnerships. These partnerships, combined with private landowner involvement in conservation programs, have focused on the acquisition and restoration of wetlands and natural areas that have been impacted by agriculture. The 2002 Farm Bill includes a number of programs to protect farmland and conserve natural resources that are administered by the USDA - Natural Resources Conservation Service (NRCS).

The Wetlands Reserve Program (WRP), Farm and Ranch Lands Protection Program (FRPP) and Grassland Reserve Program (GRP) are three of the four USDA programs administered by NRCS in South Florida. These programs use conservation easements as a tool to protect productive topsoil and restore and enhance wildlife habitat on agricultural lands in South Florida. WRP and FRPP were being implemented before the 2002 Farm Bill, and have continued to be useful conservation tools in protecting and restoring some of Florida's native landscape. Through these voluntary programs, landowners have enrolled 30,576 acres of agricultural land within the Indian River Lagoon – South and the Lake Okeechobee regions, 25,516 acres of which are within the project boundaries assessed for this report (Table 2).

Table 2. Acres Protected through the 2002 Farm Bill Programs in the Indian River Lagoon – South Project and the Lake Okeechobee Watershed

CERP Project	Property	Acreage	Program	Partners
Indian River Lagoon – South	Allapattah Ranch	15,370	WRP ¹	NRCS, SFWMD, Martin County
Indian River Lagoon – South	Allapattah Ranch – West	2,300	WRP ²	NRCS, SFWMD, Martin County
Indian River Lagoon – South	Steele Ranch	957	WRP ¹	NRCS, SFWMD
Indian River Lagoon – South	Sand Hill Crane Ranch	1,425	WRP	NRCS, SFWMD
Lake Okeechobee Watershed	Buttermilk Slough*	1,060*	WRP ²	NRCS, SFWMD
Lake Okeechobee Watershed	Lightsey Property*	500*	WRP ²	NRCS, SFWMD
Lake Okeechobee Watershed	Gardner Cobb Marsh*	2,500*	WRP ²	NRCS, SFWMD
Lake Okeechobee Watershed	Rough Island*	1,000*	WRP ²	NRCS, SFWMD
Lake Okeechobee Watershed	Henscratch Ranch	2,662	FRPP ³	NRCS, SFWMD
Lake Okeechobee Watershed	XL Ranch	2,802	FRPP ³	NRCS, The Nature Conservancy

* Properties within the Lake Okeechobee watershed but not included in the analyzed acres of this report.

¹ WRP contribution to land acquisition and restoration.

² WRP contribution to restoration only.

³ FRPP contributions to conservation easement.

Implementation Challenges

The USDA conservation programs can be valuable tools for South Florida Ecosystem restoration, enabling farmers and ranchers to voluntarily improve and conserve natural resources on their lands. However, the effectiveness of these programs in providing permanent protection for environmentally sensitive private lands has been limited by the benefit structure for landowners.

The goals and objectives of the GRP fit the needs of South Florida ranches and could be a very useful tool in keeping ranchlands productive while enhancing wildlife habitat.

The Conservation Reserve Enhancement Program (CREP), a \$153 million (\$96 million federal, \$56 million state) voluntary incentive-based program could be of high value in restoring up to 30,000 acres of environmentally sensitive lands in Florida. However, the amount paid for permanent conservation easements is derived from a formula based upon the prevailing agricultural rental rates for such lands. The resulting payment offers too little incentive for private landowners leaving the Florida CREP funds untapped to date.

Prior to October 2005, the WRP easement values were based on the agricultural value of the land, which was minute when compared to the financial incentives of selling for the “highest and best use value”. The discrepancy between these two values, especially in areas with intense development pressure, made conservation easements under WRP less attractive to private landowners. For example, in the Indian River Lagoon – South area, the maximum WRP easement payment under this methodology is less than 25% of fee title value for lands in Martin County.

As of October 2006, the appraisal scope for WRP has been modified to consider the highest and best use for land offered into the program as one potential valuation method. It is hoped that future financial incentives for participating in the WRP will be more attractive to prospective participants. Additionally, the Wetland Reserve Enhancement Program allows WRP project partners to leverage resources and provide further incentives to landowners to restore, protect and enhance wetland ecosystems. These partners can include state and local government, tribes and non-governmental organizations.

Appropriate coordination between the various conservation programs, modification of the land valuation structure and other enhancements may result in greater utilization by landowners and thereby greater restoration and conservation benefits within the South Florida Ecosystem.

Other Innovative Funding Mechanisms and Partnerships

Partnerships between government (federal, state and local), private landowners and non-governmental organizations can help protect and restore lands within the South Florida Ecosystem. The largest remaining privately held areas where natural system restoration can be accomplished are on agricultural lands. Partnerships with private landowners through either less-than-fee easements or government assisted restoration will play an increasingly important role in the future for conservation in South Florida. Additional funding and mechanisms such as less-than-fee acquisition are also of key importance. The following describes some of the innovative funding mechanisms and partnerships available in South Florida.

The intent of the Florida Rural Land Stewardship program is to further the following broad principles:

- Restoration and maintenance of the economic value of rural land
- Control of urban sprawl
- Identification and protection of natural resources
- Promotion of rural economic activity
- Maintenance of the viability of Florida's agricultural economy
- Protection of the character of rural areas of Florida

Local governments designate Stewardship areas through amendments to their adopted and state approved Comprehensive Growth Management Plans. Once designated, credits are allocated to individual parcels based on environmental and other values of the property. When credits are transferred to allow higher density urban uses in receiving areas, easements must be recorded which extinguish the right to residential density on the lands from which the credits have been transferred. Options exist to include environmental protection in those easements. The covenants or easements are managed by the county and the Florida Department of Environmental Protection (FDEP), Florida Department of Agriculture and Consumer Services (FDACS) or a statewide land trust.

In the 2001 Florida legislative session, the Miami-Dade delegation sponsored a state legislative appropriation for funds to be used by the South Florida Water Management District (SFWMD) in support of various Biscayne Bay initiatives. Six million dollars was appropriated, of which \$3.5 million was used to acquire lands within the Biscayne Bay Coastal Wetlands project.

In addition to state and federal acquisitions, local governments have made significant contributions to land acquisition. Martin County has donated over \$50 million in local sales tax revenue to support land acquisition for CERP projects. Voters in Miami-Dade County approved \$30 million for acquisition of environmentally sensitive lands in 2004, of which many are within the Biscayne Bay Coastal Wetlands and C-111 North Spreader Canal projects.

In a unique partnership, the SFWMD received 260 acres from Florida Power & Light (FPL) for the Biscayne Bay Coastal Wetlands project. The land was transferred as part of FPL's mitigation package for its Turkey Point Power Plant expansion.

The USDA's Cooperative Conservation Partnership Initiative fosters technical and financial based partnerships for achieving conservation priorities in watersheds and airsheds of special significance. It is a voluntary planning and assessment program that could be helpful in creating partnerships of the scale required for projects being undertaken for South Florida Ecosystem restoration.

Acquisition Timeframes

For CERP, the non-federal sponsor is responsible for the acquisition of all lands, easements and rights of way. As the primary local sponsor, the SFWMD has established a land acquisition schedule for each CERP project. The current schedule for natural land acquisition within the CERP footprints for the projects analyzed in this report is:

- Biscayne Bay Coastal Wetlands: Start May 2006; finish May 2007
- C-111 Spreader Canal: Start April 2008; finish October 2011
- Lake Okeechobee Watershed: Start: June 2005; finish May 2008
- Indian River Lagoon – South: Start March 2002; finish October 2019

Recognizing that waiting for these dates might jeopardize the availability of these lands, the SFWMD has pursued a strategy of early land acquisition on parcels where there is development pressure; when the real estate is part of other acquisition programs; or when there is a cost effective "opportunity purchase" with willing sellers. As of September 30, 2005, the SFWMD has secured over 50% of the 385,000 acres of land currently identified as needed for the overall CERP.

The above schedule reflects acquisition anticipated for CERP. However, for the Lake Okeechobee Watershed, this report assessed additional acreage beyond the 3,500 acres currently identified for CERP. The additional acres are not yet part of a program with specific acquisition timeframes.

Conclusion

Within the South Florida Ecosystem, some lands with high natural values may be overlooked if adequate information and funding are not available. This emphasizes the need to develop new partnerships and coordinate the myriad of funding opportunities in order to protect these natural areas in an expeditious and strategic manner. This report provides a unique assessment of the natural attributes of lands associated with four CERP projects and detailed information on potential funding and partnership opportunities to those engaged in South Florida Ecosystem restoration.

Appendices

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Appendix A: Identification and Prioritization Process

Identification of Natural Lands

In order to identify natural lands for this analysis, a variety of data was acquired and incorporated into a Geographic Information System (GIS). The following details the six GIS layers that were used, one for each criterion.

Land Cover

The land cover layer was derived from the 2003 Florida Fish and Wildlife Conservation Commission (FWC) Landsat Vegetation and Land Cover which is based on satellite imagery at a resolution of 30 meter square pixels and classified into 43 land cover types. Recent exotics mapping by the Miami-Dade County Department of Environmental Resource Management was also utilized for the Biscayne Bay Coastal Wetlands and C-111 Spreader Canal projects.

For this analysis, land cover types were assigned into one of six possible groups: Natural, Semi-natural, Agriculture, Exotics, Non-natural and Open Water. The land cover groups and associated land cover types are detailed below in Table A-1.

Table A-1. Land Cover Groups Utilized for the Natural Lands Analysis	
Land Cover Group	Land Cover Type as Identified by FWC
Natural	Coastal Strand, Beach/Sand, Xeric Oak Scrub, Sand Pine Scrub, Sandhill, Dry Prairie, Mixed Hardwood-Pine Forest, Hardwood Hammock and Forest, Pinelands, Cabbage Palm-Live Oak Hammock, Tropical Hardwood Hammock, Freshwater Marsh and Wet Prairie, Sawgrass Marsh, Cattail Marsh, Shrub Swamp, Bay Swamp, Cypress Swamp, Cypress/Pine/Cabbage Palm, Mixed Wetland Forest, Hardwood Swamp, Hydric Hammock, Bottomland Hardwood Forest, Salt Marsh, Mangrove Swamp, Scrub Mangrove, Tidal Flats
Semi-natural	Shrub and Brushland, Grassland, Bare Soil/Clearcut, Unimproved/Woodland Pasture
Agriculture	Improved Pasture, Sugarcane, Citrus, Row/Field Crops, Other Agriculture (e.g. Orchards, Nurseries & Vineyards, Aquaculture, Fallow Cropland)
Exotics	Exotic Plants (species not determined), Australian Pine, Melaleuca, Brazilian Pepper
Non-natural	High Impact Urban, Low Impact Urban, Extractive
Open Water	Open Water

Rare Species

The rare species habitat layer was developed as part of a scientific decision support tool for Florida Forever, the state's 10-year conservation land acquisition program. This layer prioritizes lands that, if acquired, would protect both the greatest number of rare species and those species with the greatest conservation need. The data are based on Strategic Habitat Conservation Area (SHCA) species information and FNAI habitat

conservation priorities data. The rare species layer contains habitat for 275 rare species and is divided into six priority classes that reflect the original priorities of SHCAs (primarily listing status and upland/wetland dependence of species) and FNAI (rarity and species richness).

FNAI Potential Natural Areas

The FNAI Potential Natural Areas (PNA) layer identifies privately owned lands that may contain good quality natural communities. These areas were delineated by FNAI through interpretation of natural vegetation from Florida Department of Transportation aerial photographs taken between 1988 and 1993. In order to be classified as a PNA, the natural communities had to meet the following criteria:

1. Must be a minimum of 500 acres. *Exceptions:* sandhill, min. 320 acres; scrub, min. 80 acres; pine rockland, min. 20 acres; dry prairie, min. 320 acres; *or* any example of coastal rock barren, upland glade, coastal dune lake, spring-run stream or terrestrial cave.
2. Must contain at least one of the following: One or more high quality examples of FNAI state-ranked S3 (communities that are very rare and local throughout their range in the state; found locally in a restricted range; or vulnerable to extinction from other factors) or above natural communities or an outstanding example of any FNAI tracked natural community.

PNAs were assigned ranks of Priority 1 through Priority 5 based on size, perceived quality and type of natural community present. The areas included in Priority 5 are exceptions to the above criteria. These areas were identified through the same process of aerial photographic interpretation as the PNA 1 through 4 ranked sites, but do not meet the standard criteria. These PNA 5 areas are considered lower priority for conservation than areas ranked PNA 1- 4 but nonetheless are believed to be ecologically viable tracts of land representative of Florida's natural ecosystems.

Because the original data are more than 10 years old, the PNAs that occur on the selected projects were inspected for accuracy. The original PNAs were found to be mostly still intact; portions that no longer met the PNA criteria were excluded from the analysis.

Connectivity with Acquired Conservation Lands

This layer includes tracts of lands that are adjacent to publicly and privately owned lands that are managed for conservation of their natural resources, including conservation easements and mitigation banks. For this layer, a tract is defined as unacquired contiguous lands with natural, semi-natural, agriculture or exotics land cover.

Connectivity with Unacquired Lands on an Acquisition List

This layer includes tracts of lands that are adjacent to lands outside the selected projects that are on acquisition lists for the Florida Forever/Board of Trustees, Save Our

Rivers, CERP and/or Critical Restoration Project programs. For this layer, a tract is defined as unacquired contiguous lands with natural, semi-natural, agriculture or exotics land cover.

Size of Tract

For this layer, a tract is defined as unacquired contiguous lands with natural or semi-natural land cover. Tract size is calculated based on total extent within the SFWMD and ignores overlaps with project boundaries.

Prioritization Process

A comprehensive analysis and assessment of each data layer was conducted for this report. Each GIS layer is made up of pixels that can be assigned a numeric value. Pixels were scored based on their contribution to natural area values for each criterion. For example, natural land cover types received a higher score than semi-natural or agriculture types within the land cover data layer.

Table A-2 Criteria, Scores and Weight Factors		
CRITERIA (weight factor)	SCORE	WEIGHTED SCORE
LAND COVER (35)		
natural	10	350
semi-natural	6	210
agriculture & exotics	1	35
non-natural or open water	0	0
RARE SPECIES (25)		
priorities 1-2	10	250
priorities 3-4	5	125
priorities 5-6	2	50
no species priority habitat	0	0
FNAI Potential Natural Areas (PNAs) (15)		
PNA 1-2	10	150
PNA 3-4	6	90
PNA 5	2	30
no PNA	0	0
CONNECTIVITY WITH ACQUIRED CONSERVATION LANDS (10)		
tract adjacent to acquired conservation land	10	100
not adjacent	0	0
CONNECTIVITY WITH UNACQUIRED LANDS ON AN ACQUISITION LIST (5)		
tract adjacent to land on acquisition list	10	50
not adjacent	0	0
SIZE OF TRACT (10)		
≥ 5,000 acres	10	100
2,500 - 5,000 acres	6	60
500 - 2,500 acres	2	20
below 500 acres	0	0

The criteria themselves were also assigned a weight factor based on their relative importance. For example, it was decided that land cover (weight = 35) should have much greater influence than tract size (weight = 10). Table A-2 provides greater detail on these criteria, scores and weight factors.

A weighted overlay analysis was conducted with the analysis extent limited to unacquired lands within or around the selected projects. The six scored data layers were multiplied by their respective weight factors and summed resulting in values ranging from 30 to 1000. The model values were then grouped into five priority classes.

The results of this analysis are summarized in Table 1. Lands classified as Priority 1 (highest priority) are those that received the highest possible scores for land cover type and rare species and for at least two of the other criteria for a total score of 800 or greater. Lands that scored less than 100 points were not prioritized.

Table 1. Natural Lands Associated with Analyzed CERP Projects								
<i>*Note that acres assessed are not to be considered acres remaining to be acquired for respective CERP projects, as this is determined by the Project Implementation Reports.</i>								
Assessed Acres	Project Name	Priority 1	Priority 2	Priority 3	Priority 4	Priority 5	Not Ranked	Acres Ranked
18,549	Biscayne Bay Coastal Wetlands	553	10,117	1,813	4,365	1,555	146	18,403
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76,493	Indian River Lagoon – South	4,771	17,845	6,370	27,802	18,635	1,070	75,423
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189,471	TOTAL	11,387	44,912	16,420	77,874	35,494	3,384	186,087

Source: Geographic Information System boundaries from the South Florida Water Management District and the U.S. Fish and Wildlife Service. Analysis conducted by Florida Natural Areas Inventory.

Appendix B: Project Descriptions and Natural Land Maps

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B.1. Biscayne Bay Coastal Wetlands

Project Purpose

The Biscayne Bay Coastal Wetlands CERP project will rehydrate wetlands and reduce point source discharges to Biscayne Bay. The completed CERP project will replace lost overland flow and partially compensate for the reduction in groundwater seepage by capturing available surface water entering the area from regional canals and redistributing it through a spreader system. This redistribution of freshwater flow across a broad front is expected to restore or enhance freshwater wetlands, tidal wetlands and nearshore bay habitat. Diversion of canal discharges into coastal wetlands is expected not only to reestablish productive nursery habitat along the shoreline but also to reduce the abrupt freshwater discharges that are physiologically stressful to fish and benthic invertebrates in the nearby canal outlets. The project will improve the quantity, quality, timing and distributions of freshwater to the bay and Biscayne National Park. A portion of this project has been designated as one of the *Acceler8* projects.

Status of Natural Lands

The 1999 Restudy conceptual footprint is currently being refined by the CERP Project Delivery Team (PDT) through the Project Implementation Report (PIR) process. The GIS project boundary for this assessment consisted of 42,573 acres. 22,583 acres have either been acquired or are located in mitigation areas. 18,549 acres of the remaining unacquired lands were analyzed due to their high natural values. These are identified on the following map.

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B.2. C-111 Spreader Canal

Project Purpose

The purpose of the C-111 Spreader Canal CERP Project is to modify delivery of water to the Southern Glades and Model Lands. The project will establish sheetflow and hydropatterns that will sustain the historic flora and fauna of these areas; improve the ecological connectivity of these lands with adjacent natural areas; eliminate damaging point sources of freshwater through C-111 to the estuarine systems of Manatee Bay and Barnes Sound; improve quantity, quality, timing and distribution of freshwater to Florida Bay and Everglades National Park; and maintain levels of flood protection for agricultural and urban areas adjacent to the project area. A portion of this project has been designated as one of the Acceler8 projects.

Status of Natural Lands

The 1999 Restudy conceptual footprint for this project is currently being refined by the PDT through the PIR process. The GIS project boundary for this assessment consists of 35,251 acres. To date, 29,137 acres have been acquired through fee simple acquisition or are within mitigation areas. 5,999 of the remaining unacquired acres were analyzed due to their high natural values. These are identified on the following map.

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B.3. Indian River Lagoon – South

Project Purpose

The purpose of the Indian River Lagoon – South CERP project is to restore a more natural volume and location of freshwater deliveries; store more water on land; reduce excessive nutrient loads contributing to muck formation, plankton blooms and fish kills; restore natural water storage functions to terrestrial wetlands in the watershed; and restore water quality and more natural estuarine bottom communities.

The five features identified to accomplish the project purpose are:

- Four above-ground freshwater storage reservoirs;
- Five stormwater treatment areas (STA);
- 92,000 acres of natural storage and water quality treatment areas;
- Diversion of existing water flows to reduce damaging impacts to the St. Lucie Estuary; and
- Removal of 5.5 million cubic yards of muck and creation of 90 acres of artificial oyster habitat in the Indian River Lagoon.

The C-44 Reservoir/STA component of Indian River Lagoon – South is designated as one of the *Acceler8* projects. The primary purpose of this reservoir is to capture and treat excess stormwater runoff before it enters the St. Lucie Estuary and the Indian River Lagoon.

Status of Natural Lands

The GIS project boundary for this assessment consists of 118,410 acres of unacquired lands. To date, 41,916 acres have either been acquired or are within a mitigation area. 76,493 of the remaining unacquired acres were analyzed due to their high natural values. These are identified on the following map.

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B.4. Lake Okeechobee Watershed

Project Purpose

The Lake Okeechobee Watershed consists of two main components. The purpose of the Water Quality Treatment Facilities is to attenuate peak flows and retain phosphorus before flowing into Lake Okeechobee. The other component includes the purchase of conservation easements within four key basins of Lake Okeechobee to restore the hydrology of isolated wetlands by plugging the connection to drainage ditches and the diversion of canal flows to adjacent wetlands. Many of the wetlands in the Lake Okeechobee watershed have been ditched and drained for agriculture water supply and flood control. Due to budget constraints, the PDT was directed by Corps and SFWMD management not to exceed 3,500 acres of wetlands restoration in the final plan for the Lake Okeechobee Watershed CERP Project. This is the acreage of isolated wetland restoration included in the Recommended Plan from the 1999 CERP Feasibility Report. However, because of the recognized importance of natural lands protection, agency managers agreed to collaborate on development of a strategy for accomplishing additional acquisition and restoration of natural areas in the Lake Okeechobee watershed using alternative funding sources outside of CERP.

As there were no conceptual boundaries in the Restudy for the wetlands to be restored in this watershed, the FWS conducted an analysis of restorable wetlands. Historically there were 580,653 acres of wetlands in the project study area which encompassed approximately 1,300,000 acres. Currently, there are only 205,433 acres of wetlands in the study area. This translates to a 65 percent loss in wetland spatial extent across the study area.

The entire project study area was screened based on land use, soils, ecological value, contaminants, economic value, cultural resources and environmental and economic equity. The screening process resulted in the identification of 106 preliminary potential restoration sites which covered approximately 381,450 acres.

The 106 potential restoration sites were then scored and ranked based on soil type, ecological value, contaminants, economic value, public lands connectivity, ecological connectivity and connectivity to wading bird strategic habitat conservation areas. Of the 106 sites, 32 sites received the highest overall scores. An additional four sites were added based upon input from the study team and stakeholders. These 36 top-ranked potential restoration sites collectively cover approximately 99,700 acres. Additional adjustments during the FNAI analysis resulted in 90,212 acres being included in the final GIS boundary for this assessment

Status of Natural Lands

The GIS project boundary for this assessment consists of 90,218 acres of unacquired lands. 1,788 acres have been acquired to date. 88,430 of the remaining unacquired acres were analyzed and are identified on the following map.

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Appendix C: Potential Funding Sources

POTENTIAL FUNDING SOURCES IN SUPPORT OF THE RESTORATION OF THE SOUTH FLORIDA ECOSYSTEM

DECEMBER 7, 2005

Programs that have been used in support of CERP conservation goals or land acquisition appear in yellow.

Program	Purpose
FEDERAL	
DOI	
Federal land acquisition programs	
Land and Water Conservation Fund (LWCF) – Federal Land Acquisition	Acquisition for various federal agencies (FWS, National Park Service, Bureau of Land Management, and USDA Forest Service). Also provides grants to states for the acquisition or development of land for public outdoor recreation uses.
Migratory Bird Conservation Fund (FWS)	Receipts in this account allow FWS to acquire important migratory breeding areas, migration resting places, and wintering areas. Areas acquired become part of the refuge system.
Grant programs strictly for land acquisition by non-Federal entities	
Cooperative Endangered Species Conservation Fund Act Program (FWS)	To provide grants to states for Recovery Land Acquisition. (There is additional funding for Planning Land Acquisition Grants.)
Grant programs that may be used for land acquisition and other purposes by non-Federal agencies	
State and Tribal Wildlife Grants (FWS)	To help states and tribes to implement comprehensive wildlife conservation plans and activities.
LWCF State Grant Program (NPS)	To provide matching grants to States and local governments for the acquisition and development of public outdoor recreation areas and facilities.
Sport Fish Restoration – Grants to States (FWS)	To provide funding for fisheries recreation and conservation efforts in the United States. Non-competitive apportionment based program.
Federal Aid and Wildlife Restoration – Grants to States	This program apportions funds to states and territories for use in restoring and protecting wildlife.
Grant programs that may be used for land acquisition and other purposes by Federal and non-Federal agencies	
North American Wetlands Conservation Act (FWS)	May fund the acquisition of habitat for waterfowl and migrating birds in support of the North American Waterfowl Management Plan.
Sport Fish Restoration --Coastal Wetlands Grants (FWS)	To acquire, restore and enhance wetlands in coastal states (FDEP and The Nature Conservancy (TNC) used this program for a project in Hendry Creek to buffer Estero Bay).
Federal Aid Wetlands Conservation (FWS)	May fund the acquisition of habitat for waterfowl and migrating birds in support of the North American Waterfowl Management Plan.
Other partnership programs supporting non-land acquisition conservation activities	
Private Stewardship Grants Program (FWS)	To provide grants for on-the-ground conservation projects on private lands benefiting federally listed, threatened, endangered species or other at-risk species.

Program	Purpose
Landowner Incentive Program (FWS)	Establish or supplement existing landowner incentive programs that provide technical or financial assistance, including habitat protection and restoration, to private landowners to benefit species at risk.
Partners for Fish and Wildlife Program (FWS)	To provide assistance to landowners to voluntarily restore wetlands, streams, grasslands, woodlands, and other important habitat that support fish and wildlife.
Coastal Program	To work with coastal communities and other partners to focus and leverage resources on high-priority coastal habitat issues by providing important technical and financial support to our existing and new partners, including the Everglades/South Florida Ecosystem.
NPS Challenge Cost Share	To increase the participation of neighboring communities and qualified partners in preserving and improving the cultural, natural, and recreational resources for which the Service is responsible.
FWS Challenge Cost Share	Foster innovative and creative cooperative efforts to restore natural resources and establish or expand wildlife habitat, with an emphasis on Federal lands and resources.
BLM Challenge Cost Share	To leverage federal dollars with private and state funding for conservation efforts, benefiting resources on BLM administered public lands. The program solicits partnerships and partnership funding through a variety of resource management programs, including fisheries, wildlife, threatened and endangered species, cultural resources and recreation.
DEPARTMENT OF TRANSPORTATION	
National Scenic Byways Program	To provide grants in support of eligible projects, including protection of natural resources in an area adjacent to a scenic byway.
Federal Lands Highway Program	To provide funds for eligible projects to include acquisition of necessary scenic easements and scenic or historic sites.
High Priority Projects	To support member priority projects.
Transportation Enhancements	To provide reimbursement for 12 eligible activities that enhance the transportation experience, including acquisition of scenic easements and sites.
USDA	
Conservation Reserve Program (CRP) and Conservation Reserve Enhancement Program (CREP)	To remove marginal agricultural lands from production and establish conservation practices to improve water quality and create wildlife habitat.
Forest Legacy Program	To help states acquire fee or easements for perpetual forest preservation.
Wetlands Reserve Program (WRP) and Wetlands Reserve Enhancement Program (WREP)	To assist landowners in restoring wetlands and wetland functions and to create federal, state, local or non-governmental organization partnerships.
Farm and Ranch Lands Protection Program (FRPP)	To purchase easements on farm and ranch lands that will remain in agricultural production.
Wildlife Habitat Incentives Program (WHIP)	To encourage the creation of high quality wildlife habitats that support wildlife populations on wetland, riparian, upland and aquatic habitat on agricultural lands.
Federal Agriculture Improvement and Reform Act of 1996 (Farm Bill) Section 390	To provide \$200 million to the Secretary of the Interior to conduct restoration activities in the Everglades ecosystem in South Florida, including the acquisition of real property.

NOAA	
Coastal and Estuarine Land Conservation Program (CELCP)	To provide matching funds to states to acquire land or easements to protect or restore coastal areas that have considerable conservation, recreation, ecological, or economic value and are threatened by conversion from their natural state to other uses or could be managed or restored to effectively conserve, enhance or restore ecological function.
STATE	
Florida Forever Program/Board of Trustees (FDEP)	To fund the acquisition and restoration of environmentally sensitive lands, lands to protect water resource development and supply, to increase public access, public lands management and maintenance, and increase protection of land by acquisition of conservation easements. Florida Forever is the umbrella funding source for the state programs listed below.
Florida Forever Program Water Management Districts (FDEP)	To fund the acquisition of lands and capital project expenditures necessary to implement the water management districts' priority lists; \$25 million of the annual Florida Forever allocation to the SFWMD is to be used exclusively for the acquisition of land needed to implement CERP.
Florida Communities Trust (FCT) (DCA)	To fund the state's land acquisition grant program for local governments and non-profits to acquire lands that promote outdoor recreation and natural resource protection needs identified in local government comprehensive plans.
Florida Forever Program Inholdings and Additions Programs (FDEP)	To acquire inholdings and additions to existing conservation lands.
Florida Greenways and Trails (FDEP)	To fund the statewide initiative to create a system of greenways and trails connecting communities and conservation areas.
FL Recreation Development Assistance Program (FRDAP) (FDEP)	To fund the acquisition or development of land for public outdoor recreation and the acquisition of inholdings and additions for state parks.
Save Our Everglades Trust Fund (FDEP)	To implement CERP.
Florida's Rural Land Stewardship Program (FDEP, FDACS, counties)	The intent of the program is to direct development of rural lands to preserve agriculture and protect the environment. Local governments designate Stewardship areas within their Comprehensive Plans and credits are allocated to individual parcels based on environmental and other values. The credits are recorded as a covenant or restrictive easement.
COUNTIES	
Broward Safe Parks and Land Preservation Bond Program	To protect the remaining natural lands in Broward County not currently managed for preservation.
Conservation Collier	To acquire, preserve, restore and manage environmentally significant lands.
Lee County Conservation Lands Program (Conservation 20/20)	To acquire, restore and manage lands important to wildlife, water supply, flooding, water quality, and resource oriented public uses.
Martin County Lands for Healthy Rivers and Natural Resource Protection (Healthy Rivers) and Lands for You	Healthy Rivers: to acquire lands for river restoration, provide matching funds for state and federal land acquisition programs for conservation and protection of natural resources and provide for municipal infrastructure. Lands for You: to preserve and protect environmental resources and cultural history while providing expanded outdoor recreational opportunities.

Miami-Dade County Environmentally Endangered Lands	To acquire, preserve, enhance, restore, conserve, and maintain environmentally endangered lands for the benefit of the present and future generations.
Monroe County Land Authority	To acquire land for recreation, affordable housing, environmental protection, and the protection of private property rights.
Orange County Green PLACE	To preserve conservation and water resource lands.
Osceola County S.A.V.E Osceola	To acquire lands to protect open space and water quality, preserve natural areas, protect endangered or threatened animals or plants and provide passive recreation such as trails.
Palm Beach County Land Acquisition Program for Conservation Purposes	To acquire additional environmentally sensitive lands for perpetual preservation and to acquire agricultural lands to preserve agriculture in the County's Agricultural Reserve.
Polk County Environmental Lands Program	To acquire, preserve, manage and restore endangered and environmentally sensitive lands, water resources and important wildlife habitat.
St. Lucie County Environmentally Significant Lands Program	To preserve native ecosystems and meet County Comprehensive Plan open space requirements.
NON GOVERNMENTAL ORGANIZATIONS	
Conservancy of Southwest Florida	For the preservation and stewardship of the land and water resources in and around the 60,000-acres Corkscrew Regional Ecosystem Watershed (CREW).
CREW Trust	For the preservation and stewardship of the land and water resources in and around the 60,000 acre CREW.
Florida Keys Land and Sea Trust	For the preservation, conservation and the restoration of rare and endangered areas of the Florida Keys.
Green Horizon Land Trust, Inc.	To preserve environmentally valuable or sensitive lands and open space areas in and around the Central Florida Ridge for the benefit of the general public, and to educate the public as to the importance of such lands and their preservation.
Martin County Regional Land Trust	To preserve land on Florida's highly developed east coast.
National Fish and Wildlife Foundation	To award challenge grants that address priority actions promoting fish and wildlife conservation and the habitats on which they depend; work proactively to involve other conservation and community interests; leverage available funding; and evaluate project outcomes.
National Park Foundation	The South Florida National Parks Trust seeks to create a new tradition of philanthropy in support of Biscayne, Dry Tortugas and Everglades National Parks.
The Conservation Fund	To forge partnerships to preserve our nation's outdoor heritage, American's legacy of wildlife habitat, working landscapes and community open space.
The Nature Conservancy (TNC)	To preserve plants, animals and natural communities that represent the diversity of life on Earth. TNC works to increase public funding at the local, state and federal level and works with landowners to craft innovative land protection projects.
Trust for Public Lands (TPL)	To help agencies and communities create a vision for conservation, raise funds for conservation and complete conservation real estate transactions. TPL raises public as well as private funds and packages projects to funders and agencies.